IN THE DRAWINGS

Revised drawings are submitted to comply with 37 CFR § 1.84. The drawings may be found in pages 1 through 10 with Figures 1 through 12. No new matter was introduced.

IN THE SPECIFICATION

Replacement paragraphs are submitted below in compliance with 37 CFR § 1.121 (b)(ii). These replacement paragraphs do not introduce new matter. In addition, marked versions of the replacement paragraphs are found in Exhibit "A" in compliance with 37 CFR § 1.121 (b) (iii).

Please substitute the following paragraphs:

Replace the paragraph beginning on page 19 line 23 with the paragraph as follows:

FIGURE 1A is an isometric depiction of a high aspect ratio biconvex aperture nozzle with injection ports for multi-axis thrust vectoring. FIGURE 1B presents a plan view of high aspect ratio aperture nozzle 10 illustrating injector ports 12, 14, 16 and 18. Throat slots 12 and 16 serve as injector ports proximate to the throat of the nozzle and flap slots 14 and 18 serve as injector ports proximate to the nozzle flap. FIGURE 1C illustrates two additional sets of injectors yaw slots 16 and 18 and pitch slots 12 and 14. These dedicated sets of injectors 12, 14, 16 and 18 can be arrayed around the periphery of nozzle 10 to achieve vectoring in pitch and/or yaw vector planes as is shown in FIGURE 1A by thrust vector 19. The injector slots or pitch slots 12 and 14 shown in FIGURE 1C are located on the top and bottom surfaces of nozzle 10 and are intended to provide pitch plane vectoring. While those injectors such as yaw slots 16 and 18 located on the sidewalls are intended for yaw plane vectoring. Slots 12, 14, 16 and 18 can be swept at an angle similar to that of the exit plane trailing edge. Such injectors direct injected flow having vector components, I_x, I_y, and I_z, opposed to that of the primary flow vector V_{pf} in

the intended vectoring plane, yz for pitch or xz for yaw of FIGURE 1D with the special cases of a zero sum x component for pitch or zero sum y component for yaw.

Replace the paragraph beginning on page 38 line 10 with the paragraph as follows:

FIGURE 10 depicts one embodiment of injectors 276 and 277 according to the present invention, and the effect that injectors 276 and 277 can have on flow 214 exiting an exhaust chamber 262 through nozzle opening 272. When injectors 276 and 277 are turned off so that they do not inject a secondary flow, the effective cross sectional area of nozzle opening 272 is defined by the area of the plane generally perpendicular to flow 214 between the walls 280 of nozzle 268. When symmetric and opposed injectors 276 and 277 are provided similar secondary flows 284 and 285 into flow 214, the secondary flows evenly block the nozzle's opening to vary the nozzle's discharge coefficient, which is analogous to effective cross sectional flow area, to decrease the effective cross sectional area of nozzle opening 272 to the area depicted by numeral 282. Thus, nozzle opening 272 depicts an effective cross sectional area that could correlate to an engine in afterburner, and nozzle opening 282 depicts an effective cross sectional area that could correlate to an engine when not afterburning.

Replace the paragraph beginning on page 40 line 1 with the paragraph as follows:

Next, the orientation and location of injectors 276 and 277 can be arranged to maximize penetration into primary flow 214. Injectors 276 and 277 provide secondary flows 284 and 285 that are at an injection angle 286 from being completely opposed to the direction of primary flow 214 along the longitudinal axis of nozzle 268. FIGURE 10 depicts angle of 286 as 15 degrees from the longitudinal axis of nozzle 268, although angles of between zero and 30 degrees will provide enhanced blockage of nozzle opening 272. In one alternative embodiment, the angle 286

of injectors 276 and 277 can be adjusted to a range of values. Injector 276 is located at the beginning of throat 270 so that the secondary flow from injector 276 is aimed into the subsonic portion of the nozzle flow field 212. Injection of the secondary flow into the subsonic portion of the flow field prevents the formation of shocks, which can significantly impact the nozzle's thrust efficiency.

Replace the paragraph beginning on page 40 line 20 with the paragraph as follows:

Finally, injectors 276 and 277 can be incorporated into various nozzle designs so that the nozzle design, injector mass flow characteristics, injector orientation, injector location and the secondary flow pulse characteristics cooperate to provide maximum blockage for a given secondary flow. Referring to FIGURE 11, one effective internal nozzle convergence contour is depicted. Exhaust chamber 262 is adapted to accept engine exhaust at an afterburner duct 290, and to provide the exhaust to throat 270. Exhaust chamber 262 has a high discharge, smooth transition contour shape. Although exhaust chamber 262 can have a variety of profiled choked nozzle convergence shapes to enhance the effect of injectors 276, an ellipse shape is depicted in FIGURE 11. The ellipse shape has a major axis 292 with vertices along its major axis having a length depicted as a, and a minor axis 94 with a vertices along its minor axis having a length depicted as b. The afterburner duct 290 into exhaust chamber 262 has a diameter proportional to major axis 292, such as four times the distance a. Length b of minor axis 294 establishes the contraction ratio of nozzle 268, meaning the ratio of the areas of afterburner duct 290 and throat 270, and can be set at a value similar to that of the F110-GE-129 turbofan engine's nozzle, such as approximately 1.8.